

### AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions:

1. (Currently Amended) A method comprising:

registering an attribute to a distributed dictionary for a plurality of nodes in a network having an unknown topology, said attribute comprising a key to index the attribute, a value associated with the key, and an incarnation identifier for the value, wherein registering the attribute comprises:

receiving the attribute in a multicast from a reporting node at one of the plurality of nodes;

comparing the key to keys of any previously stored attributes;

if the key has not been previously stored, storing the attribute and a receiving port identifier at which the attribute was received;

if the key has been previously stored, comparing the incarnation identifier to the previously stored incarnation identifier of the corresponding previously stored attribute;

if the key has been previously stored and the incarnation identifier is new, storing the attribute and the receiving port identifier;

if the key has been previously stored and the incarnation identifier has been previously stored, comparing the receiving port identifier to the previously stored receiving port identifier of the corresponding previously stored attribute;

if the key has been previously stored, the incarnation identifier has been previously stored, and the receiving port identifier has been previously stored, refreshing the attribute; and

if the key has been previously stored, the incarnation identifier has been previously stored, and the receiving port identifier has not been previously stored, ignoring the attribute.

2. (Currently Amended) The method of claim 1 wherein registering the attribute further comprises:

obtaining the value associated with the key;  
determining the incarnation identifier for the value; and  
combining the key, the value, and the incarnation number into the attribute.

3. (Currently Amended) The method of claim 1 wherein registering the attribute further comprises:

multicasting the attribute to the plurality of nodes in the network.

4. (Previously Presented) The method of claim 1 further comprising:

registering a modified attribute to the distributed dictionary, the modified attribute comprising the key, a modified value, and a new incarnation identifier.

5. (Previously Presented) The method of claim 4 wherein registering the modified attribute comprises:

- obtaining the modified value associated with the key;
- determining the new incarnation identifier for the modified value;
- combining the key, the modified value, and the new incarnation identifier into the modified attribute; and
- multicasting the modified attribute to the distributed dictionary.

6. (Cancelled)

7. (Cancelled)

8. (Currently Amended) The method of claim 7 further comprising:

- ~~deregistering an older attribute of the first and second attributes having an older incarnation identifier~~ the attribute.

9. (Currently Amended) The method of claim 8 wherein deregistering comprises at least one of:

- over-writing the ~~older attribute in the local memory with the~~ with a newer attribute value; ~~and~~ or
- storing the ~~older attribute value until the older attribute value expires.~~

10. (Cancelled)

11. (Previously Presented) The method of claim 1 wherein the distributed dictionary comprises equivalent sets of registered attributes stored locally at each node of the plurality of nodes.
12. (Previously Presented) The method of claim 1 wherein the network comprises at least one of a local area network (LAN) or a switch stack.
13. (Previously Presented) The method of claim 1 wherein the plurality of nodes comprise a plurality of switches comprising a switch stack.
14. (Cancelled).
15. (Currently Amended) The method of claim 14 wherein the multicast ~~protocol~~ comprises a generic attribute registration protocol (GARP).
16. (Currently Amended) An article comprising:  
a machine readable storage medium having stored thereon executable instructions to implement registering an attribute to a distributed dictionary for a plurality of nodes in a network having an unknown topology, said attribute comprising a key to index the attribute, a value associated with the key, and an incarnation identifier for the value, wherein registering the attribute comprises:

receiving the attribute in a multicast from a reporting node at one of the plurality of nodes;

comparing the key to keys of any previously stored attributes;

if the key has not been previously stored, storing the attribute and a receiving port identifier at which the attribute was received;

if the key has been previously stored, comparing the incarnation identifier to the previously stored incarnation identifier of the corresponding previously stored attribute;

if the key has been previously stored and the incarnation identifier is new, storing the attribute and the receiving port identifier;

if the key has been previously stored and the incarnation identifier has been previously stored, comparing the receiving port identifier to the previously stored receiving port identifier of the corresponding previously stored attribute;

if the key has been previously stored, the incarnation identifier has been previously stored, and the receiving port identifier has been previously stored, refreshing the attribute; and

if the key has been previously stored, the incarnation identifier has been previously stored, and the receiving port identifier has not been previously stored, ignoring the attribute.

17. (Currently Amended) The article of claim 16 wherein registering the attribute further comprises:

obtaining the value associated with the key;

determining the incarnation identifier for the value; and  
combining the key, the value, and the incarnation number into the  
attribute.

18. (Currently Amended) The article of claim 16 wherein the executable  
instructions are further to implement:

registering a modified attribute to the distributed dictionary, the modified  
attribute comprising the key, a modified value, and a new incarnation identifier

~~registering the attribute comprises:~~

~~receiving the attribute in a multicast from a reporting node at one of the  
plurality of nodes; and~~

~~storing the attribute to local memory based at least in part on the key.~~

19. (Currently Amended) An apparatus comprising:

a processor; and

a machine readable storage medium coupled to said processor, said  
machine readable medium having stored thereon executable instructions that  
when executed by the processor implement registering an attribute to a  
distributed dictionary for a plurality of nodes in a network having an unknown  
topology, said attribute comprising a key to index the attribute, a value  
associated with the key, and an incarnation identifier for the value, wherein  
registering the attribute comprises:

receiving the attribute in a multicast from a reporting node at one of the plurality of nodes;

comparing the key to keys of any previously stored attributes;

if the key has not been previously stored, storing the attribute and a receiving port identifier at which the attribute was received;

if the key has been previously stored, comparing the incarnation identifier to the previously stored incarnation identifier of the corresponding previously stored attribute;

if the key has been previously stored and the incarnation identifier is new, storing the attribute and the receiving port identifier;

if the key has been previously stored and the incarnation identifier has been previously stored, comparing the receiving port identifier to the previously stored receiving port identifier of the corresponding previously stored attribute;

if the key has been previously stored, the incarnation identifier has been previously stored, and the receiving port identifier has been previously stored, refreshing the attribute; and

if the key has been previously stored, the incarnation identifier has been previously stored, and the receiving port identifier has not been previously stored, ignoring the attribute.

20. (Currently Amended) The apparatus of claim 19 wherein registering the attribute further comprises:

obtaining the value associated with the key;

determining the incarnation identifier for the value; and  
combining the key, the value, and the incarnation number into the  
attribute.

21. (Currently Amended) The apparatus of claim 19 wherein the executable  
instructions are further to implement:

registering a modified attribute to the distributed dictionary, the modified  
attribute comprising the key, a modified value, and a new incarnation  
identifier; registering the attribute comprises:

receiving the attribute in a multicast from a reporting node at one of the  
plurality of nodes; and

storing the attribute to local memory based at least in part on the key.

22-24. (Cancelled)

25. (New) The article of claim 18 wherein registering the modified attribute  
comprises:

obtaining the modified value associated with the key;  
determining the new incarnation identifier for the modified value;  
combining the key, the modified value, and the new incarnation identifier  
into the modified attribute; and  
multicasting the modified attribute to the distributed dictionary.



26. (New) The article of claim 16 where the executable instructions are further to implement:

deregistering the attribute.

27. (New) The article of claim 16 wherein deregistering comprises at least one of:

over-writing the attribute with a newer attribute value; or

storing the attribute until the attribute expires.

28. (New) The article of claim 16 wherein the distributed dictionary comprises equivalent sets of registered attributes stored locally at each node of the plurality of nodes.

29. (New) The apparatus of claim 21 wherein registering the modified attribute comprises:

obtaining the modified value associated with the key;

determining the new incarnation identifier for the modified value;

combining the key, the modified value, and the new incarnation identifier into the modified attribute; and

multicasting the modified attribute to the distributed dictionary.

30. (New) The apparatus of claim 19 where the executable instructions are further to implement:

deregistering the attribute.

31. (New) The apparatus of claim 19 wherein deregistering comprises at least one of:

over-writing the attribute with a newer attribute value; or  
storing the attribute until the attribute expires.

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